



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,460	03/01/2004	Yigal Bejerano	29250-000999/US	9258

32498 7590 07/25/2007
CAPITOL PATENT & TRADEMARK LAW FIRM, PLLC
ATTN: JOHN CURTIN
P.O. BOX 1995
VIENNA, VA 22183

EXAMINER

TORRES, MARCOS L

ART UNIT	PAPER NUMBER
----------	--------------

2617

MAIL DATE	DELIVERY MODE
-----------	---------------

07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/788,460

Applicant(s)

BEJERANO ET AL.

Examiner

Marcos L. Torres

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's arguments directed to the 112 rejection have been fully considered but they are not persuasive. Applicant states that one of the ordinary skill in the art would understand the meaning of the limitation; however, the specification neither applicant argument disclosed what would be understood by one of the ordinary skill in the art.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 8, 16 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. The term "substantially" in claim 8, 16 and 25 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari US 20050169222A1 in view of Benveniste US 20060039281A1.

As to claim 1, Ayyagari discloses the method for providing a relative level of fairness and Quality of Service (QoS) [see par. 0015] comprising: identifying a set of non-interfering access points (see par. 0017); allowing only the identified set of non-interfering access points to transmit during a Contention-Free Period (CFP) slot; and allowing all access points to transmit after the end of the CFP (see par. 0042-0057). Ayyagari does not specifically disclose a wireless local area network (WLAN) network. In an analogous art, Benveniste discloses the method for providing a relative level of fairness and Quality of Service (QoS) [see par. 0032] in a wireless local area network (WLAN) network [see par. 0012] comprising: identifying a set of non-interfering access points (see par. 0017); allowing only the identified set of non-interfering access points to transmit during a Contention-Free Period (CFP) slot; and allowing all access points to transmit after the end of the CFP (see par. 0108). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use in a WLAN system the non-interfering techniques to avoid collisions and increase communication quality.

As to claim 2, Ayyagari discloses the method further comprising dividing the CFP into one or more slots (see fig. 2,4,6; par. 0049).

As to claim 3, Ayyagari discloses the method further comprising: assigning one or more of the so divided slots to an access point which is allowed to transmit based on the number of users associated with the access point (see fig. 2, 4, 6; par. 0049).

As to claim 4, Ayyagari discloses the method as in claim 3 further comprising: assigning the so divided slots to access points to maximize a lower bound of a slot-to-user ratio (see fig. 2, 4, 6; par. 0045-0049,0094-0101).

As to claim 5, Ayyagari discloses the method further comprising: assigning at least one so divided slot to each access point (see fig. 2, 4, 6; par. 0049).

As to claim 6, Ayyagari discloses the method further comprising controlling each access point making up the identified set of non-interfering access points to ensure each access point begins and ends a transmission during the CFP slot (see fig. 2, 4, 6; par. 0049).

As to claim 7, Ayyagari discloses the method further comprising: transmitting an instruction to initiate transmission of one or more beacon messages to prevent users associated with access points from transmitting prior to the beginning of the CFP (see par. 0045-0049).

As to claim 8, Ayyagari discloses the method further comprising: transmitting an instruction to initiate transmission of one or more beacon messages such that no two adjacent APs in an interference graph may send beacon messages substantially simultaneously (see par. 0045-0049).

As to claim 17, Ayyagari discloses the system further comprising one or more sets of non-interfering access points, each set of access points operable to: transmit during at least one Contention-Free Period (CFP) slot; and transmit after the end of the CFP (see par. 0045-0049).

Art Unit: 2617

Regarding claims 9-25 they are rejected for the same reasons already considered in claim 1-8 shown above.

10. Claims 2-8, 10-17 and 19-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari in view of Benveniste, and further in view of Shvodian US 20060050730A1.

As to claim 2, Benveniste discloses everything as disclosed above (see claim1) except for the method further comprising dividing the CFP into one or more slots. In an analogous art, Shvodian discloses the method further comprising dividing the CFP into one or more slots (see fig. 7). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine this teaching to share the CFP.

As to claim 3, Shvodian discloses the method further comprising: assigning one or more of the so divided slots to an access point which is allowed to transmit based on the number of users associated with the access point (see fig. 7).

As to claim 4, Shvodian discloses the method as in claim 3 further comprising: assigning the so divided slots to access points to maximize a lower bound of a slot-to-user ratio (see par. 0170-0171).

As to claim 5, Shvodian discloses the method further comprising: assigning at least one so divided slot to each access point (see par. 0170-0171).

As to claim 6, Shvodian discloses the method further comprising controlling each access point making up the identified set of non-interfering access points to ensure

Art Unit: 2617

each access point begins and ends a transmission during the CFP slot (see par. 0170-0171).

As to claim 7, Shvodian discloses the method further comprising: transmitting an instruction to initiate transmission of one or more beacon messages to prevent users associated with access points from transmitting prior to the beginning of the CFP (see par. 0020).

As to claim 8, Shvodian discloses the method further comprising: transmitting an instruction to initiate transmission of one or more beacon messages such that no two adjacent APs in an interference graph may send beacon messages substantially simultaneously (see par. 0170-0171).

As to claim 17, Shvodian discloses the system further comprising one or more sets of non-interfering access points, each set of access points operable to: transmit during at least one Contention-Free Period (CFP) slot; and transmit after the end of the CFP (see par. 0170-0171).

Regarding claims 10-16 and 19-25, they are rejected for the same reasons of claims 2-8 shown above.

Conclusion

11. Examiner's note: Examiner has cited particular sections in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is

Art Unit: 2617

respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any response to this Office Action should be mailed to:

U.S. Patent and Trademark Office
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

571-273-8300

for formal communication intended for entry, informal communication or draft communication; in the case of informal or draft communication, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

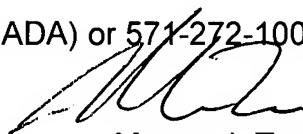
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcos L. Torres whose telephone number is 571-272-7926. The examiner can normally be reached on 8:00am-6:00 PM alt. Wednesday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-252-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Marcos L Torres
Examiner
Art Unit 2617

mlt